

Greenland

1945

I

by [illegible]

ZOOLOGICAL FIELD BOOK.

CONTAINS LIST

of

Recent photographs

E. D. Hovey,
Am. Mus. Nat. Hist.,
New York.

1915

August - November

Holstenborg →

Telephoto -
Number T.5 -

Other roles are
numbered
without a
letter

3 August - 1915 -

Not Disko 1

~~Disko Island~~ sighted early
this morning - Stood in
toward it till 10 o'clock
(my watch) & then veered into
our course again -

Telephoto 1+2 - from SW
showing high mountain
with glacier neve' field
on southern slope -

✓ Roll 3A - ^{No 2-1} 1, 2 + 3 ✓ as we approach-
ed island -

Noted for grasses (2 or 3 inches high)
and flowers - more than
south -

21-4

Hog back ridges run
down to western coast

Stratified ^(?) rocks dipping high
toward north - more probably
volcanic rocks

Beautiful scenery.

Captain Comer called me
at 6 this morning to look
at coastline - Profile is
peculiar steep faces to north
+ gentle slopes to south
giving strongly serrate ap-
pearance - Thus -



21-6 - Capt George Comer at the wheel.

Southern end of Disko is the higher part of the island. No general ice cap on the island, which looks very attractive for geologizing.

The high mountain shown in the photos seems to have a lava cone + flow in west side below neve' field.

Another photo ⁽¹¹⁾ + telephoto ⁽³⁾ of this mountain.

Don't see any glacier leading down from the neve' field.

Joe going to Holstenborg^{ns} not Disko!

Roll 21

Teleph 3~~4~~. 9-2cm. ^{7.12^{1/2}} 15 to 20 miles

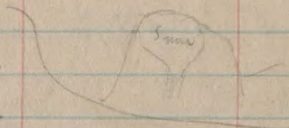
north of Holstenborg - Looking ~~E~~

4~~5~~ - 9-2cm. ^{7.12^{1/2}} north of no. 3
Looking ~~E~~ by N

5 - 2cm-7 ^{7.12^{1/2}} Mountain mass

as in #3 showing two cirques
filled with neve Looking ~~E~~

6 2cm 7-18 -



Large mountain
mass next north of the big valley
Looking ~~E~~

3a-5-16-02 - Looking E 1/2 S at
Kangek + N. Strim Fjord

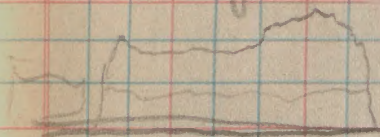
4 Aug. ~~✓ 22-1~~ ⁸⁻⁰⁴ - Iceberg
grounded off Disko Bay
n g

4 Aug.

Whalefish Islands in Disko
~~7 Bay~~ ^{7 Bay} are apparently of
 volcanic rock - made
 out good basaltic column
 in the low cliffs -

✓ 1.6-4-6 cm 7-w.o. ~~7~~

(not exp) 1.6 cm 6-w.o. are of
 enormous iceberg off
 Whalefish Is. 9 o'clock p.m.



A second, lower
 berg shows behind the
 high one.

22-1 - S.W. side Godhavn har-
bor, showing wreck of "Fox"

22-2 - Do.

22-2a - SS "Fox" - near
view taken by H.C. Pickels
in 6 Aug

5 Aug.

✓ 23-1 - 16-04 Entrance

to Godthavn harbor

looking west -

"Cluett" in harbor

23-2
23-3 Lindor Inspector house
from SE (near)

Prilling

~~Bistaup~~

Bistaup

~~the harbor~~

of women & girls

23-4 group at school ^{store house}

23-5 - ~~Father~~

23-6 - Two women

✓ 24 - Views from hill south
of town bearing signal -

24.6 waterfall in cliffs of Blackfell
near Godhavn 7

surroundings of
Godhavn are entirely
massive feldspathic gneiss
Well rounded & ^{showing} glaciated
striae and grooves

Spec-553 - gneiss near signal -

On the gneiss lie horizontal
basalt beds. 20-25 in number.
~~Stratified rocks~~

perhaps 1500 ⁻¹⁷⁰⁰ feet above the
gneiss - Mt. 2200+ ft

✓ 24-1-8-04

24-2-16

No-1150 ft on
Danish map

Pele Brosing standing
beside a ^{tree} bush (a savin)
which has been gathered
& bundled to dry for
fuel

Spec 562 - Commercial Coal

P.M. - Inspector Lindor

Governor Bistrup Capt Pickels
Greenlander, chief & my
self in motor boat about
30 miles along coast
to Orfak Mt. (Uifak)

Nordenskiöld got irons
out of water at low tide
in the shallow bay under
the mountain - None
found above

✓25 - In Godhavn &
En route

✓26 - Blue mts +
Orfak Mt

✓27 En route back to "Cluett"

Common sea birds nest in cliffs. Cries strident -

17 to 25 flocks seen
nest mt. a/c birds -

← Najat is name of mountain (fide governor) & Ovifak (~~U~~^{oo}-i-fâk) is name applied to coast below this mt. (= Uifak on map)

Collected specimens
of basalt from talus
and from beside cliff
200 meters \pm above sea
[Spec. 702 - See p. 10]

554

555

556

557

558

559

~~560~~

560

561

-

Interesting to note the
piling up of debris on
each side of the two

Blaafjeldt (2200') is name on map.

Central water courses
Nagal Mt. must pre-
sent a cliff front
of 2000-2500 feet to
the sea -

W. of Godthamn
a point makes an
excellent point
Canary - Basalt

Spec. No. 702 ^{Basalt} - Collected at Uifak by
Greenlander + given to Inspector H. Lindow
who gave it to me on 30 May, 1917.

6 Aug.

Left in motor boat at 10⁴⁵
for trip to eastward -

✓ 28-1 to 4 - views of iceberg
near entrance to harbor - Arch
+ morainic material

28-5- Beacon on point

Beacon is made of gambones
of Whales on a wooden
frame -

all rock is gneiss with
a few pegmatite veins
apparently a basalt dike
+ some hornblende (?) schist
inclusions -

99
Coast 1 mile \pm east of Godthorpe
is of basaltic agglomerate
(ash) for $1/4$ mile -

(On Magsuak peninsula

Here are tree trunks stand-
ing erect in the coal measures
(see Inspector Hindew)

The ash bed is much
grottoed at sea level -

Bed is 30-50 feet thick or
more

Next mile beautifully
small-columnar basalt
flow comes in beneath
ash bed - Columns
curved & sheep like

some natural arches - Many
small pinnacles -

DB-6 - Columnar bed &
waterfall.

Then a strictly vertical
section of ashbeds & flows

the flows show the small
curved columns beautifully
developed. Cliffs some

500 ft high. Picturesque
glimpses of high mts
through clefts in the
shoe cliffs - Magnificent

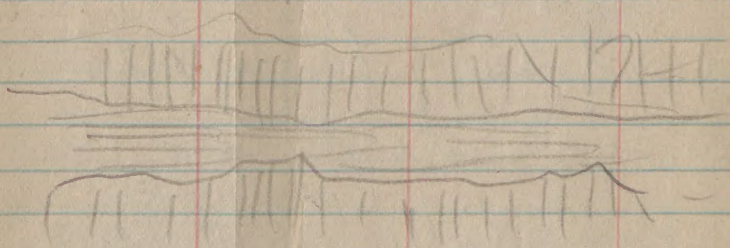
Some fine gray ash
looks like sandstone

✓ 29-1-6 - Eastward along coast.

The lower basalt weathers
to a greenish black brown
to, while upper basalt weath-
ers red + reddish brown.
Thin beds of lava noticeable
in the basin.

(10±)

→ Thin Black shales (1)
interbedded with ^{coarse} columnar
basalt.



15+ miles ^{yellowish} white sands with
black bands - Coal? (Prob. ok)

Siniglik <sup>11 miles in
straight line
from godham</sup> 15

Landed at about 16 miles
and examined section
Black band 3-4 feet thick
Containing coal occurs in
the sand, which is ^{light} yellowish
^{green} when dug into - The sand
below the coal band con-
tains many coaly lenses
a fraction of an inch thick
Several coal bearing seams
are in the yellow sand
Sand is 50-75 feet thick
as exposed (say 70')

The sand is unconsol-
idated quartz sand.

Sand bed is 70-80 ft thick as
exposed

The sands seem to occupy
an embayment in
the basalt flows
& some of the coal is
more like charcoal
than real coal —
like the charcoal ^{in the ash} at
Martinique & St.

Vincent

Spec. 563-4-5-6 singlike coal

At least 100 berps were
in view in Disko Bay
from top of bluff
above coal sands
150 to 200 ft above sea

Narrow plateau at top of
 cliffs 200± ft above sea-
 level ^{brush belonging to}
 Savina ^{bird} hollow family? & ^{other}
 plants, forming a
 turf carpet pleasant
 to walk upon - Look-
 ing eastward from point
 the second point still
 to east shows much
 yellowish white sand
 extending $\frac{1}{4}$ way up
 the mountain.

Apparently the lavas
 are the older & the sands
 were formed & the

coal plants grew in
embayments of the
lava mts while they
were depressed below
present position.

Boulders of gneiss are
on this flat as evidence
of Glacial Period ice.

Ice cap comes almost
to edge of the great cliffs
see photo—

at 14 miles the sands
are exposed lying on
a bed of basalt—

The ~~bat~~ green-black basalts
are of older age than upper
perhaps?

M. P. Persild
Mr. ~~Persild~~ (of ~~elling~~?) resi-
dent manager of the Arctic
station here called this evening.
He says that the iron bearing
basalt is beneath the hill basalt
and that it was exposed at Uifak
(Ovifak) only at low tide, its up-
per portion being covered by
the talus slope. Of late years
very few iron boulders have been
found. For two or three years none.
He has one large + two small
ones -

8 Aug. Disko Fjord -

76-2-4cm 8-stop 16. Disko Fjord - 10 a.m. somewhat hazy

Entered by motor boat from ship which was becalmed -

Apron extending out^{to} from southern point is composed of one (or more) flows of the greenish black basalt.

Made landing at little group tents on small cove east side point

✓ Photos 9x2 Maligiak.

Went out to rocky point at entrance basalt weathering very red in places.

Specimen 567 - massive basalt from near point.

9x2-6-9 Maligiak
9x2-1+2 Cliff Cotton on board Cluett
9x2 3+4 Ice berg off Disko Fjord
2-5 mouth of Disko Fjord

North side of northern fjord or
branch there rises a mt of $3,000 \pm$
feet wh. looks as if it might
possibly have been an old
center of eruption

✓ 76-3 - Cliffs at side of entrance to
Disko Fjord

Prob. ok.

✓ 76-4 Entrance to Disko Fjord

9 Aug - Mm 1 - 4/25

+ Mm 2 w/25 northern
end of Disko Island from
the northwest. Heavy
clouds but lighter on the
land.

10 Aug.

South Point

✓ 30-1 - no 04 Svartenburg
(from SW) **Poor**
wh is the western promon-
tory of Sv^artenshuk's Perim-
sula.

✓ 56-5 - 6 cm 6 - Sv^artens hake
(from N.W. - South point)

The top of
~~Above~~ this bold promontory of
lava flows (like Disko) wh dip
gently toward the northeast
is a plateau rising a mile or two
back into a high peak now
hidden by clouds = Svartenhuk
The plateau promontory soon
meets toward the north in still
higher (2000[?] ft) bluffs where
top slants up to the peak without
intervening plateau. apparently
no beaches - Some of the face
drop directly into the sea, while
others show debris cones at their bases

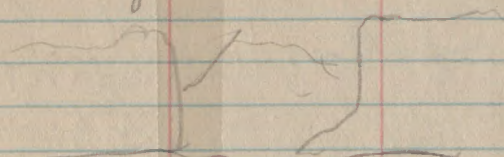
Midnight last night
 passed through great field
 of large bergs off Umanak
 Fjord. This is a great feeder
 of bergs on account of the
 number and size of the
 glaciers discharging into
 the heads of its branches

9x3.1

3/ Aal - w 50 Icebergs & surf
 ✓ Light very dull.

Entrance to Laxe Fjord next
 south of Sandersons Hope is a
 gateway strongly resembling that
 to ~~Yellowstone~~ & Yosemite Park
 (Sentinel Rock at left & Bridal
 Veil at right)
 The cliffs here are 2000 ±

feet high - Granitic?



^{9x3-2} Jaa 2 W 050 - ^{oull} Entrance

to Loxe Fjord from

W N W Rounded

light yellowish brown

island in foreground

Glacial ice fall shows

within fjord on its

south side

Sanderson's Hope

shows good arches

in its western

face like the ~~Arch~~
 Washington Arch
 in Yosemite

30-2 Sandersons Hope br. r. w. ~~Ng~~

30-3 Iceberg & surf

✓ Bt 1 - ^{9x3-3} wo 25 dull -

Profile of bluff of
 Sandersons Hope from
 br. (Kaersomak)

✓ Bt 2 - ^{9x3-4} wo T Prof spoiled
 Arch of Sanderson
 Hope - ~~Ng~~

✓ Bt 1 - ^{9x3-5} wo 25. Northern
 profile of Sandersons
 Hope

✓ 9x3.6
C 2 Nov 5 Northeast up
channel north of Sanderson
Hope.

The granite (3) of the
point shows fine rounded
surfaces, due to flaking.

✓ 9x3.7
Dd 1 - Nov 25 730p dull
Forecast
Upernivik from
SW.

9x3.8 - 4.12 Settlement of Upernivik
11 Aug - Upernivik 31 - Kyakos etc.
Beaching Kyak - N. G.

132 32-6 - Dr's home + boats
✓ 33 - Danish Harbor. Old priest's house in double
11 Aug.

34

35 Town of Upernivik + en route
11 + 12 VIII

27

12 Aug ²⁷⁻¹ ✓ T 6-6, 4 cm 6 mts
north of Upernivik

T. 1A + B - 4 cm 6 7 12¹/₂ Islands
still farther north

T. 7. ⁴⁰ 18 ⁵⁰ 2, 4 cm 6 - 12¹/₂ + 18 -

Table topped mountain
inland showing between 2
islands north of Upernivik

T. 2A + B ¹⁶ 7 ✓ 4 cm 6 7 18 - Sanderson's
hope for NW + mts west of it -

36-182 ⁸ ⁹ Iceberg with vertical
cliffs 200-250 ft high facing the
north - 2

Sighted ice pack about 7:30 p.m.

¹⁰ ✓ 36-3 - w.o. 04 ~~Line~~ 9 ¹⁵ p.m. - Large
berg with nearly vertical faces

28

3626
14 Aug. - Hooded
seal on "cliff"

And an enormous snow
drift on its northern face.

36.4 + 5 Iceberg -

15. Aug. 10:45 p.m.

Roll 30 -
14-15 Aug
skt

5.1 Aa 1 + 2 - 8/295 - Sun
in northern sky

5.2 Bb 1 - 4/295 - Do

30-5 off C. Shack
Iceberg
30-6 Sugar Loaf
Bay lat. 74°

5.4 42 4/295 Do at 11 p.m.

37-1 - mts east of Duck Island ✓
37-2 + 3 Iceberg north of Duck Island ✓

16 Aug. Betw. 9 & 10 a.m.

at about 9 a.m. Heavy clouds
with light background.

5.4 Cc 1 - 4/25 Devils Thumb & Wilcox
D. Head from W.

5.5 Cc 2 no/25 Do.

5.7 T. pl. 3A. 7 12 1/2, 4 cm 6 Devils Thumb
from W.

5.8 3B - Do. Ice front north of Devils Thumb

5.9 4A - 7 10, 4 cm 6 Devils Thumb &
Wilcox Hd

5.10 n.g. B - Do - South coast line w. Wilcox Hd

one

The last two prob. spoiled through
allowing curtain to catch.

5A. ^{29.1} \checkmark $\frac{1}{10}$ 5B $\frac{0}{18}$ ^{or double} at 4 cm + 6 speed

6A $\frac{0}{12\frac{1}{2}}$ ^{3.0} 6B $\frac{4}{18}$ \checkmark at 6 cm + 6 speed

all on Devils Thumb 24 midist.

Devils Thumb is a lone pillar of
rock standing on a small island.
The Danish map gives its altitude
as 2675 feet. It looks to be less
than $\frac{1}{3}$ as wide as it is high.
The Arctic Pilot vol IV p 66 quotes
Lieut Ryden R.D.N. as saying that
there is no such pillar here and
that what has been described as
a pillar is the south snow free
side of a field 2621 feet high
seen in profile, the snow covered
northern side being merged in
mist or in the snow of the inland ice cap
and therefore invisible to the distant
observer from the west. Ryden's
statement seems not to be borne
out by the Danish chart and the

Tome

object certainly looked this morning to be an isolated pillar of rock. The mate, studying it from the mast head with glasses, made it out to be a lone pillar of rock. Capt. Comer and Pickels considered it the same. It is a remarkable object if it is a lone pillar so high and narrow, and a remarkable exposure if Lieut Ryder is correctly quoted (Meddel-
elser om Grönland VIII, 253, is the ref. given in the Arctic Pilot)

✓ 5th Oct 1, no 25 - 9:15 p.m. Near
view of large berg of ~~an~~ old
ice (paleartic?)

5th 17 Aug.

Ship stopped by ice floe about 5 a.m.
and made fast to edge. Flat
calm.

5th Oct 2 - ^{no.} 25 Over cast. Making
fast the ship (change from
5th first moorage)

5th Oct 1 - Do.
5.9

5. Ec 2 - w.o. 25 - "Cluett" moored to ice
 side view. Capt George Co-
 mer & mate Michael Davis.

5. 1/4 1 - ^{w.o.} 25 - Do. quartering view.

5. 1/2 2 - ^{w.o.} 25 - ~~Do~~ Comer & Davis

6. 1/4 1 - w.o. 25 - E.O. 26.

All with sky heavily overcast
 + almost raining -

Capt. Comer, the mate, one of the sea-
 men (old mill) and I took a walk
 out on the ice. At first it seemed
 strange and insecure to be upon ice
 thirty miles from ~~shore~~ the mainland
 and ten miles from the nearest land
 (Brownas Island) and with lots of open
 water very near, though none in
 any direction to do us any good.

At mooring all day -

18 August. Still at mooring
 all morning. Cast loose and

started engine shortly after dinner
Ran an hour or so and then
lay still in ice for a time. Ran
again & moved. 5 p.m. tried
again but got only the ships length
ahead before we were stuck fast.

Beautifully clear day, no wind.

Clouded over during part of
afternoon.

b¹ ✓ Pg. 2 8/35 Northward from "Cluette"
b² foretop at first ice mooring.

b¹ ✓ H 1, 8/35 Eastward, including
b² Browne's Is. (largest one)

b¹ ✓ H 2 8/90 Sabine Island from
b² SSW

b¹ ✓ Kk 1 8/90 Browne Island (largest)
b² from ship's deck

b¹ ✓ Kk 2 8/110 Red Head and ice -
b² ✓ Looking southeastward from ship -

Lb 1 1/4/35 } Captain Corner washing
 6.7 2 1/4/35 } clothes

6.8

Nm 1 1/4/50 Yanka Nathan, the cook.

6.9 1/4/50 Rear view of Captain

6.10

Cornet washing & the cook at galley.

Nm 1 1/4/35 Captain Pickels using

6.11

N. g. ~~longer~~ ex p
 artificial horizon (of molasses)

6.12

2 1/4/35 Captain Pickels taking
~~off~~ sun in usual way.

✓ J. 2.1 F 12 1/2, 4 cm 6 speed.

Red Head nunatak and
 ice cap. Should show the
 crevasses and prominent
 irregularities of surface
 of the enormous glaciers

✓ T 2, 2. ~~Box~~ $12\frac{1}{2}$, 4, 6. Largest of the
Browne Islands

2, 3 - Spoiled by curtain -

✓ T, 4 - $12\frac{1}{2}$, 4, 6. Sabine Island

These were taken while the ship
was in motion and ^I took a
new set after she stopped.

Tried Kearton camera. Motor
refused absolutely to work. Ran
machine by hand, showing
passage through ice and oper-
ation of wheel by two men.

✓ T 2, 5. $12\frac{1}{2}$, 4, 6 - Red Head
and ice cap, from N.W.

✓ 6 - $12\frac{1}{2}$, 4, 6. Northern end
of largest of Browne Islands +

island ice cap in background.

✓ 7. 12 1/2, 4, 6. Northern of Brownes.

✓ 8. 12 1/2, 4, 6. Sabine Island from S.W.

✓ 3A-37, 5. 11/02 Largest of Brownes Islands from west.

✓ 6. 8/02 Sabine Island fr. S.W.

19-VII

✓ 3a 38-1. wo of men cutting trench in ice in front of Cluett

20-^② VII 38-2. 3. 4-~~5~~ Ice began to move.

22 VII 38-~~5~~[✓] - Old seal hole in the ice - ✓ 38-6 - Thorn Island

✓ 3. VIII J. 8. 3. Melville Monument

23 VIII. ^{5 12 1/2} J 8. 4 cm/9 From "Cluett"

75° 38' N. 60° 30' W. looking eastward
at inland ice cap showing high
snow-covered pointed peak.

J 8. 6 Do. Do. Great Arctic paleocrys-
tic iceberg + ice cap beyond.

25 VIII 9:30 to 10:30 am.

more photos
Cape Walker
✓ 1-1 Aa 1. 16/35 Eastward from Cluett
in 75° 56' N. 61° 24' W. Wellhaven
Island, with large berg in foreground
and the inland ice cap in the background.
An enlargement might show the cre-
vasses in the ice cap.

✓ 2 Aa 2 16/90 Northward from vessel at
same point. The snow covered cone
which may show is Mt. Haffner.

3 ✓ 136 1 16/90 N. N. E - Ice fields + islands

4 ✓ 2 16/90 E. S. E. " N. g.

"Wellhaven Is." prob = Cape Walker

37

✓ 5- Dec 1 4/25 } Will sharing the cook -
✓ 6 2 4/25 } (Posed -)

✓ 1. Feb. 2-9- 18/4cm/6 - N.E. from vessel at $75^{\circ}50'$
N., $61^{\circ}24'$ W. - to show floe ice, bergs,
islands and ice cap.

✓ 10- Do Northward from ship - Snow covered
cone is Mt. Haffner.

✓ 11 Do N. half- } ^(Cape Walker?) Wellhaven Island
✓ 12 Do S. half } from the west.

✓ 19- 18/4/6 - Mt. Haffner + moun-
tain east of it - 2:15 p.m.

✓ 3- 25/4/6 - Glaciers on ~~Wellhaven Is.~~ ^(Cape Walker?) 2:20 p.

26-IV - 19/3 - (~~Double exp - ?~~) Mt Haffner

✓ 4 Mt west of Haffner 12 1/2/6/6

✓ 5 16/6/6 Granite? Island or headland
bearing N. 40 E from ship (Mt Haffner
N 20 E (connected N 116 E + N 96 E))

✓ 6 16/6/6 Crevasses (ice fall) in ice
cap, looking N. E.

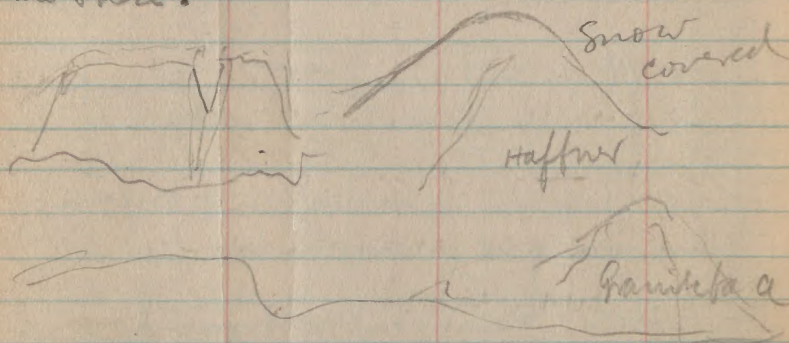
(Is what I have been calling
Welhaven Is. really Cape Walker?)

no

8

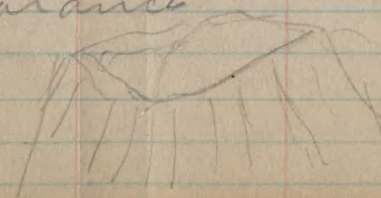
Nov 7 C.C. 1 (n.g.) + 2. 4/90 Mt Haffner + neighbors.

The mountain next west of Haffner shows a wonderful V shaped cleft ^{or notch} cutting down half way from its flat top to its base + continued as a narrow gorge to the base.



✓ T. Roll 10. 1. 12 1/2 / 4/6 Broad granite tower.

2. 12 1/2 / 4/6 Mt. east of Mr Haffner
Like a mansard roof in appearance



Sheep lower
Sides round
ravined
and a

smooth low-angled top covered with snow.

B - 10/4/8 Mr. Haffner + mt. west of it (Notch Mt.)

^{map 12}
Plate 7. Dd - 4/90 Northeastward from vessel centering on Plumduff Island. (Which is Heilprin Island?)

✓ T. Roll 10 - 4/ 10/4/8 ^{great} Headland at N.E. angle of Melville Bay and ice cap ~~behind~~ beyond it breaking down as an ice fall around a large nunatak.

✓ 5 - 12 1/2 / 4/6 Hog back ridge back (N.E.) of Plumduff Island + ice cap.

✓ 6 - 12 1/2 / 4/6 Ice cap -

Graflex 7, ^{cup water} 4/90 Welhaven Island from the west. (Dd 2)

✓
To-day have had a wonderfully
fine view of Melville Bay coast
ice cap and islands from
~~Wellman Island~~ [Cape Walker ?]
to Melville Cape. Rocks look
and weather like granite.
Bold, massive shilly and
mountainous country

Perhaps Plumduff Island
is Seven or Bolgoni - are
these the round dome covered
bare islands that look like
Sentinels? Make Davis wd
call them the Devil's Teeth.

✓✓ W.O.-01

30-VIII 7-9+10 ^(Σ 1+2) Chief marooned
on ice pan & being ferried to ship
on little cake by 2^d-mate Norman -

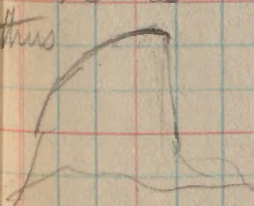
31-VIII 7-7f 1+2 (=11 & 12) 4/90

✓11- Northward from "Cluett"
at ~~5:40~~ 5:45 p.m. - The black
headland is Cape Melville -

✓12- Northeastward view from
the Cluett across the ice -
5:45 p.m.

Near Cape Melville there is a
beautiful half-dome (of granite?)

like that in the Yosemite Valley



thus The precipice faces the
east or southeast

The rounded portion of
the mountain is covered
with snow.

2 Sept. Thursday. In the ice off
Brushman Island.

The south-facing precipice of
Cape Melville presents a rusty
yellowish brown appearance wh
contrasts strongly with the al-
most black (brownish black)
sides and top in good sunlight

✓ 11-12 18/4/6 10¹⁵ am. Centered on Cape Melville

2 ⁸⁰ Mts ~~west~~ ^{north} of Cape Melville with a
large iceberg in front of them.

3 ⁸⁰ Cape York from the east and
2.5 mi ± distant

4 ⁸⁰ Headlands (3) east of Cape York.
from southeast.

5 12¹/₂ / 4/6 Brushman Island from
the south - 3 p.m.

3 Sept. off Cape York Bay entrance - Cliffs show up brown but I cannot determine their nature, except that they are not composed of basalt.

✓ 7/11-6- 10/4/6 9 a.m. Headland about east of Cape York Bay -

✓ 9. 8. 1. 16/35 near view of iceberg at entrance to Cape York Bay. Deep clefts in this berg give the blue ~~etc~~ color - pale at edge, intense far within -

9. 8. 2, 3 & 4 all 8/35 Eastern Middle & western of three headlands just east of C. Y. Bay. These are dull brown in color, streaked with snow also topped with snow & with snow capped heights behind - Glaciers come down to the sea -

3-IX

66
8
5.28

(10) 32 9 1/2 = 2.5
2 1/3 6 1/2
28

712-1-18/4/6 Entrance to Cape York Bay. Surface of ice beginning to show wind ripples.

q. 8-5 16/90 Ice cap east of Cape York Bay - including George Island and eastward.

q. 8-6 16/90 Cape York from E.S.E.

Cape York Bay seems to be filled solid with ice, both sea and glacier.

q. 7 ✓ spoiled N.Y. Dabhuam pin broke at 4 1/2 (2)

✓ 8 4 1/2 / 35 - Eastward from George Island (i.e. N.E. from ship) and including Meteorite and Bushman Islands

4 Sept - off Cape York - Thick weather

5 Sept - Clear, beautiful day but no wind

q. 8-9 4 1/2 / 90 Glacier in "Crimson cliffs" west of Cape York.

✓ 10 - 4 1/2 / 90 Cape York from the S.W.

✓ 11 1/2 4 1/2 / 90 "Crimson cliffs" west of the large glacier shown in no. 9.

The cliffs are warm enough in color to present a pleasing contrast

to the white of the ice cap, glaciers and sea floes - Color is dark, blackish iron oxidized brown, with an occasional strong tone of red in it - "Crimson" is a rather strong term to apply to it -

There is a greenish hue to some of the talus slopes as if vegetation were present there -

✓ 1/2 Cook beside galley door - Ice on hatch

✓ 6 - IX - Cloudy + slightly hazy -

✓ Roll 39-1-9¹⁵ am 11/04 off Cape York

One Arctic and two near by -

(Wrongly dated the 7th instead of 6th)

✓ 8 - IX - Gr. 9-1.4¹⁵/90 A large, simple ice berg. Off Cape York

✓ 9-2.4¹⁵/90 - Off Cape York - View northward from top of galley - "Crimson Cliffs", glaciers, icebergs & sea ice.

Clear beautiful day with strong N.W. wind which fortunately has been driving lots of ice past us, while we have been protected by a big berg which grounded last night near us. We can do nothing in the ice under this head wind.

9. IX - Clear + fine. Light ^{bitful} southerly winds in morning. Brisk northerly breeze after noon.

Up sail at 5 a.m. - but got jammed in ice about 6 o'clock + were held fast there till ten.

Photos about 9 o'clock -

✓ Graph. 9. 3, $4\frac{1}{2}/35$; 9, $4\frac{4}{8}/90$; 9, $5\frac{4}{8}/90$; 9, $6\frac{4}{8}/35$ Two slightly different views on four plates. "Cluett" jammed in the pan ice off Cape York. Large iceberg in the background.

Drifted W.N.W. under sail a few miles till noon. Then wind died out and a few minutes later came out of the north - head wind for us - Tide turned + we moved to big grounded berg.

10. IX. Clear + fine. No wind except for occasional light puffs from south or southeast. Left big berg about 5 a.m. and tied up to another at about 10 o'clock - Left that again at noon -

Photos - I. p. 3. 1-18/4/6!! Crimson

cliffs, Cape York. Glacier with oval
nunatak in it. Halfway to Conical Island
Parker Snow Point

✓ J. pl. 3. 2 $12\frac{1}{2}/4/6$ Crimson cliffs of Cape
York - glacier two thirds way to Conical
Island. Parker Snow Point.

Gr. 9. 7 and 8, $4/110$ Captains Corner
Pickels on ice berg.

✓ 9-9 - $4/90$ - E.O.H. on berg.

11-IX - Gr. 9-10 $4/100$ Iceberg off Crim-
son cliffs.

weather fine, but no wind blowing -
Crimson cliffs well named near point.

Gr. 9, 11 - $4/50$ Conical Rk + Parker Snow
Point from S.S.E.

✓ 9-12 - $4/35$ ~~Is~~ Crimson Cliffs - First
glacier south east of Parker Snow Point.

✓ J. pl. 3, 3. $12\frac{1}{2}/4/6$ Parker Snow Point from
S.S.E.

✓ 3, 4 - $18/4/6$ Crimson cliffs - First glacier
southeast of Parker Snow Point.

Gr. 10, 1 + $48/35$ Glacier southeast of

Parker Snow Point.

✓ Gr. 10-2 4/25 Ditto, near view.

Parker Snow Point and Conical Rock look to ~~be~~ to be some massive, basic igneous rock in the Archaean.

✓ 22 Sept. Sunday

✓ Gr. 10, 3. 4/35 Wostenholme Island from the south. 6 a.m. Strongly colored red + white sandstone, dipping N.W., resting on Granite (?) and gneiss.

✓ 10, 4. 4/35 Cape Athol from the south, about 6 a.m. Looks like limestone. but may be gray + black quartzite + shale
+ is gneiss + schist

Saunders Island lying north of Wostenholme Is. is a broad flattopped mass of horizontally bedded red + white sandstone. — [Not so but have dip of $15^\circ \pm$ toward north — what I saw first was southern cross section giving the horizontal lines —]

✓ Gr. 10. 5-4/90 Peter Freuchen's power boat approaching the "Cluett" ?

at 3:30 p.m. left "Cluett" with P. Freuchen in his boat for Etah via Ootah's village on ^{Kiatak} Northernumberland Is.

-39-2 - Dalrymple Rock from SW
 ✓ Gr. 10, 6 4/90 @ 5 p.m. - Dalrymple Rock near northern side Wostenholme Island. Saunders Island is in background and should show northward dip of the sandstones -

Western side Wostenholme Island shows great development of gneiss + schist cut by great veins of feldspathic pegmatite -

13 Sept. Monday - Arrived Northernumberland Island at 3:30 am. after a wonderful night of calm and freedom from ice -

✓ Gr. 10, 7. Ootah's tupic + group about the victrola Before sunrise

✓ 10, 8 - Ootah beside victrola, do

✓ 10, 9 - ^{time} Group of newly prepared winter houses - Woman Padika

✓ 10-10 - ^{time} Two women (Ootah's mother + missionaries wife Padika
 Too dark to see

✓ 10, 11 - Fine - glacier with its strong
marginal moraines of Potsdam (?)
or Medina (?) sandstone -

⊗ All foregoing taken before sunrise -

✓ 10, 12 - Grave + group of houses -

Motor boat grounded on rocks by
recession of tide! Examined shore line
east side of island for $\frac{1}{2}$ mile.

39) Got 3 a and made 4 or 5 photos }
of beach + the shore cliffs.

Landed on basaltic columnar
pavement of old diabase or diorite

Spec. 568 + 569⁵⁷⁰ are from base-
ment rock of east cliffs near
Ootah's trap

Spec 571 comprises contact
between this old igneous
and ~~the~~ a sheet of the newer
basic trap (diabase?)

Spec. 572 Diabase (2) at contact
with the underlying stratified
rock - ~~this~~ (^{which is} a quartzitic shale)

Spec 573 . Massive diabase (?)
from about 3 feet above lower
contact (with the underlying shale)

Spec 574 Four fragments making
one hand specimen from
quartzite band in contact
with overlying diabase

The quartzite + quartzitic
shale overlies the old diorite
+ underlies the newer diabase
(or basalt)

3 a photos are

39-~~3~~³ - Beach with grounded
boat and growlers + background
of glacier + mountain

✓ 39-5
~~39-4~~ motto in quartzite

+ shale. Grotto is uncommon
in that it has ice + frost in it
all summer although at sea level
+ exposed to eastern sun.

39-4 Cliff section showing
✓ 39-5 Contact ~~with~~ between shales
+ overlying diabase or basalt.

P. French as scale

✓ 39-6 Fault zone in shales -

P. French as scale

39-6

✓ Left boat free + started
at 11 a.m.

Northumberland Island is large
+ high
+ apparently presents some interesting
geology. Saw one great dike cutting
from bottom to top of sea slope from
latter land.

Wounded entrance to Ingle -

field Gulf - Very attractive looking
region up its reaches - glacier above.
Glamy sea today -

Coast north of Inglefield presents none
of the fine glaciers filling bays at sea
level

cliffs present horizontal lines
of bedding - sandstones & shales
with black bands (are these carbon
? with coal?)

Petrowitz - Igneous dike forms
lower half of face of bluff

Heavy swell

Motor broke down about 6 p. m.
just after Frenchman said that
another four hours wld land as in
'Etah'. Nothing doing but the
two Eskimos got out & towed
into the small boat & towed
the big boat - absolutely hard work

wh. the swell made harder, but
fortunately there was no wind
I steered at about $12:30$ we reached
the little cove at ^{south} east end of Cape
Alexander promontory where French
found Ekblaw in August 1914 -

We cast anchor in poor holding
ground and put a long line ashore
which was made fast around a column
of basalt - = Sarfalik (or Sorfalik)
on Sonntag Bay - Two (perhaps 3)
glaciers discharge into this bay and
they kept us guessing ^{ast} what the bergs
from them would do to us -

14.15 Got a very little sleep during rest of
night but a strong N. or N.E. ^{wind} came
down on us about three a.m.
and gave us plenty to do to keep out
of trouble. Hendrik got the engine
fixed up, but we could not leave,
because wind was too high - He +
Sigdler went ashore to adjust

our mooring. They had not put the boxes of oranges, guns + walrus gun aboard the large boat + they had to leave them on shore in order to get out again. Much vertically columnar basalt along this part of the shore. Deep, narrow canyon discharges just beside our moorage. Old igloo here. Also caches of walrus meat and canned goods belonging to our Etah people. Peter + Sigdlu went ashore about 10 o'clock. The little boat (the Cluett's work boat) was almost wrecked in the surf by the chunks of ice. We pulled the tender out by means of the power boat + at high tide 2 p.m. Hendrik went ashore by spooling along the mooring rope and got the men but left the boxes. At about 3 o'clock Peter went

as nearly ashore as he could + cut the rope + we started.

✓ Photos - Gx 11, 1 - 4/35 1:30 p.m. Front view of glaciers in Sonntag Bay.

✓ 11, 2 4/35 Sarfalik. Landing place, basaltic columns. One igloo should show.

Southeast of where the landing was made there is a bouldery beach - formed by the stream issuing from the canyon.

The columnar basaltic lava forms the shore for half a mile \pm at Sarfalik and westward.

The mass of Cape Alexander is made up of Huronian(?) quartzites with interbedded lavas and sills. Great feeding dikes are seen in some places.

✓ 11, 3 4/90 Walrus group in the water. Near Sarfalik (Sikkwadi)

✓ 11,4 4/90 Cliff of red and yellow quartzite with old interbedded lava rising east of second glacier from the point. Lava very green in color. Faulted with the quartzite. Feeding dike at south end of cliff.

✓ 11,5 4/90 Distant view of faulted cliff -

~~11,6 8/90~~ We came to anchor for a short time in a cove at the foot of this glacier, on account of wind which was strong. "Hayes Harbor"

✓ 11,6 4/90 Glacier hanging on to the south side of Cape Alexander between its two great glaciers

Cape Alexander glacier, i.e. the one nearest the point on south side of the promontory, presents an abrupt cliff edge in which the lines of sand showing old surfaces are very prominent. They run at many

angles with reference to the present surface. In places the debris has accumulated enough to amount to small lateral moraines, now included or buried in the ice.

✓ Ex. 11, 7 $\frac{4}{8}/35$ } near views of the front
✓ 8 $\frac{4}{8}/90$ } of Cape Alexander
~~9 $\frac{4}{8}/90$~~ } glacier to show
its make up

Ex. 11, 9 $\frac{4}{8}/90$ } Cape Alexander
glacier - ~~general~~
front view.

✓ Ex. 11, 10 $\frac{4}{8}/90$ Cape Alexander
glacier - Western edge and
bordering land.

✓ Ex. 11, 11 $\frac{4}{8}/90$ Cape Alexander
glacier, ~~general~~ view of front.

The heavy wind prevented our rounding the point and we retreated to a place, where a small tight in the shelving quartzite had a bouldery bottom gave holding ground.

for our anchor and the shore gave a mooring. Here we lay till 3:40 the next morning.

15 September. 6:45 a.m. arr. Etah.

House built on a steep debris cone formed by streams coming the near high land.

Provision Point, half a mile east west of the house, is where the Erik landed her cargo in 1913 & where Peary made headquarters. It is composed of ~~columnar~~ basalt. Ship can moor alongside. Blocky hornblende gneiss.

Gx 11, 12 x Gx 12, 1 to 12. All at Etah [4 lost] Gx. 13, 1 to 12 at Etah and glacier of Northumberland Is. on board the Chell in North Star Bay near N. Umanak. 9-12 on 19 Sept

16 September.

Stopped at Nerke to see Mac Millan and Small, who were hunting walrus for food. Left at 6 a.m.

Great glaciers characterize north side of Northumberland Island.

Photos in Gx. No 13 - Side moraines -

~~Cape~~ Northumberland Island shows some remarkable dikes cutting across the strata from sea level to the table land -

Cape Parry is a bold promontory of basalt (?). Columnar basalt along sea level. Some small grottoes are in this.

High S.E. wind forced us to anchor for night.

17 September - ~~South~~ Western point of Saunders Island presents strikingly vertical cliffs which are very beautiful with their inclined banding of red, purple and white quartzite (Huronian). About ^{6 p.m.} ~~soon~~ reached "Cluett" at anchor in North Star Bay not far from Umanak.

19 September - Sunday ^{13.9} 13.9
19x 14, ☒ to 4. Dundas mountain to at east end of North Star Bay & the "Inger Lis" leaving the "Cluett" with her tender & Mac's canoe in tow. { 14.3+4 spoiled in development Dundas }

19. IX. 1915

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Ex. 14, 5+6 $\frac{4}{8}/25$ East. in full winter costume. Kooletah given me by Peter Faenchen. Bear skin pants, kamiks and mittens belonging to Ekblaw.

20 September.

Ex. 14, 7. $\frac{4}{8}/75$ Petowik Glacier from the south at 8 a.m.

Ex. 14, 8. $\frac{4}{8}/35$ Cape Dudley Digges from the south west.

Ex. 14, 9. $\frac{4}{8}/35$ Conical Rock from the east. S. E.

Ex. 14, 10. $\frac{4}{8}/75$ Conical Rock from S. E.

Ex. 14, 11. $\frac{4}{8}/75$ Crimson Cliffs opposite Conical Rock looking S. E.

Ex. 14, 12. $\frac{4}{8}/75$ Crimson Cliffs opposite Conical Rock looking N. E.

Roll 40, 1 11/02 Conical Rock and crimson cliffs from the south.

24 September 1915.

Roll 40, 2 11/04 Parker Snow Bay. Glacier and nunataks abt of head.

✓ 40,3 11/04 Parker Snow Bay -
cliffs forming north shore, from
southeast. Great sill should show.

Considerable flat at head of bay below
the two glaciers which discharge
here. Curving beach of pebbles
and sand, behind which there is
a pond of fresh water from the glacier.
Beach rises toward north and its
top is ~~a~~ ridged more or less par-
allel to the beach. Pressure of ice
foot at high tide.

Spec. 575 Mica schist from
beach at head of Parker Snow
Bay.

✓ Roll 40, 4 $\frac{1}{2}$ 11/04 "Cluett" moored
to cliff ^{near} ~~at~~ Parker Snow Point.
from northeast N. 8.

40,5 11/04 "Cluett" ditto from north west.

Spec. 576 to 585 inc. Granodiorite,
gneiss and dike diabase from
part of cliff to which "Cluett"
was moored.

25 September. In the morning

Ekblaw and I climbed to top of cliff above igloo at northeast turn of the bay. ~~Harcoian quartzites~~ and quartz Schists and gneiss

In the afternoon he and I visited the northern of the two glaciers - This bears a considerable terminal moraine of micaceous gneiss (gray) boulders and sand. Water still flowing copiously. Must be a lot flowing during the summer.

28 September. Walked with Ekblaw across the grass slope at the foot of the northern hills east of the bay. Polygonal solifluction forms well developed. Ekblaw says that they are still better at Umenak. Due to shrinkage and aggravated by freezing. They are like the shrinkage polygons of a drying mud flat but are on a much larger scale. All sizes of polygons - many 5, 6 & 7 sided. Major cracks are one ft. to two feet or more wide and deep.

29 September

Spec. 586, 587, + 588 Intrusive
Granite collected by Captain
H.C. Pickels on Conical Rock
off Parker Snow Point.
The specimens are duplicates
broken from one fragment.

3 October. "Ipsuisuk"

Ashore this morning with Ekblaw, Gre
and Capt. Pickels.

There is a strong copper stain (malachite?) coloring a three or four foot band
of the schist, ca 200 feet above the
sea at the northeast turn of the bay.
Seems to be due to alteration of chal-
copyrite.

The high grass covered talus shows
many vertical crevices due to ~~the~~
downward creep

On 7 October - Local. = Ipsuisuk
On shore with Ekblaw, climbing
to top of mountain overlooking

Cape Dudley Digges and surrounding region. Gentle slopes wh. form the mountain mass above the shore cliffs are covered with angular loose fragments of the country rock. Rarely does a bit of ledge project thro' this coating. The angular blocks are of all sizes. They speak eloquently of the effects of the extensive and practically continuous frost work that has broken up the rocks. It seems probable that the prevailing winds across these ridges are Easterly, coming from the ice cap. The sandy or rather gravelly detritus is arranged in long windrows which extend irregularly in a general north-south direction. Apparently the fine material has been blown out from among the coarse blocks and assembled itself in these windrows. The rock is all quartzite[?] & it dips N.W. or west of north. Old intrusives and ^{veins} show in the cliff section of the quartzites also gneiss (sp. 589) ~~no bottom in lower one third~~.

8 October. ✓ Gx 15, 1 $\frac{4}{8}/10$ Parker Snow Bay - warping the "Cluett" back through the ice.

✓ 15, 2 $\frac{4}{8}/20$ Ditto.

10 October - Roll 40, 6 $\frac{8}{2}$ Parker Snow Bay - North side of entrance at 4 p.m. from inner bay.

17 October Gx 15, 3 + 4 - $\frac{4}{8}/25$ Panorama of head of Parker Snow Bay.

Gx. ✓ 15, 5 - $\frac{4}{8}/25$ Head of Parker Snow Bay.

✓ 18 October - Gx 15, 6. $\frac{4}{8}/20$ Hauling "Cluett" into E.-W. position. From N.W.

Gx 15, 7. $\frac{4}{8}/25$ Do. From S.W.

Gx. 15, 8 $\frac{4}{8}/25$ Do. From S.E. Men pulling on stern rope and pushing against side of vessel.

19 October - Roll 41, 1 $\frac{11}{10}$ & 41, 2 $\frac{8}{5}$ "Cluett" prepared for beginning winter. Berth is 150 yds from shore.

~~41, 3~~ 22 October Clear + bright.

41, 3 - $\frac{8}{25}$ - Parker Snow Bay -

Northeast quarter showing "Cluett" between two peaks of an iceberg.

41,4 - 8/25. Parker Snow Bay - North east quarter from slightly different standpoint.

41,5. 8/25 Parker Snow Bay. Section of small Tongue glacier at sea level, middle of southern side of inner bay. This is a snow drift glacier. Big cracks in the near-shore ice prevented my going to the glacier. Section shows curved lines of old surface, - Bent during accumulation.

41,6 - 8/25 Parker Snow Bay. North-west coast from Dudley Digges Point to Soapstone Valley. From the south-east from near the Tongue glacier.

24-X. 10:30 a.m. Clear.

9x15, 9+10 8/25. Staff group on ice astern of the "Cluett"

25-X. 10:30 a.m. Cloudy & dull.

Roll 42, 1. w.o/25. Egingwah, Sivik, Pudlak and a sledge and team of dogs.

Call glacier at head of Wostenholme Sch
Ekleau Glacier - I'll have the right to
already named by Sieck

28.X - 10:30 am - Clear - Sun below mt

Roll 42, 2. W.O./10.

✓ Pudlak, Inetliak and their baby on the mother's back - On Board "Cluett"

✓ Roll 42, 3. n.o./10 Do.

11 a.m.

Roll 42, 4 no/25

✓ Crew of "Cluett" hauling coal ash
in bags on Pardlak's kamatik

42, 5. n.o./25

✓ 42, 5. m.o./25
Evik with kamatik and dogs ready
to start for Cape York.


42,6 w.o./50

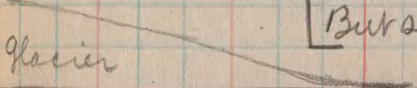
✓ 42, 6. w.o. / 50 *n.g.*
 Erik + Egingwax en route for
 Cape York - just after the start.
 (Capt. Pickels on one of the karnatiks)

29 October.

Ekblaw and I ascended southern gla-
cier at head of bay and walked a mile
or more southeastward on the ice cap.
Hard or impossible to say where
glacier ends and ice cap begins,
since there is no cirque at head
of this glacier. ~~Slope~~ Glacier

Call this the George B Cluett glacier 69

(+ the big ice glacier the ~~George B Cluett~~ glacier)
or perhaps better the Esblaw glacier
rises with gradual slope from the
alluvial plain. Seems to be no cliff
at foot of ice, tho' this may be so low
that it is hidden by the snow. Lower
portion of glacier looks concave but
may not be so, as if its profile were
like this:  No terminal moraine.

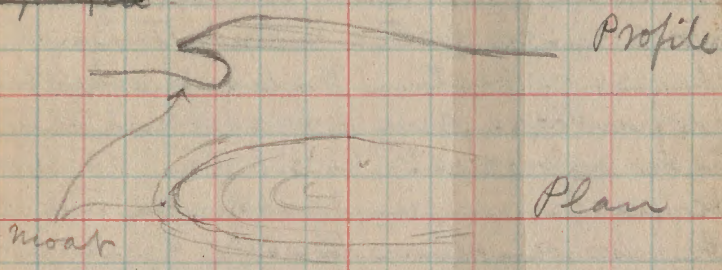
 Butsee p. 84
glacier alluvial plain.

We crossed no crevasses and saw none. Most of the surface is covered with snow, and this was its appearance when I first saw it from the "Cluett" passing the entrance to the bay at a distance of six miles \pm on 11 September. Also when I saw it from the shore at the head of the bay a half-mile distant on 24 September. In this feature the contrast with a neighboring glacier $\frac{1}{4}$ mile to the north is marked. That is mostly bare, bluish green ice and is furthermore steep or precipitous at its lower end, is deeply crevassed and has a strong terminal moraine along part of its lower end.

The prominent nunatak of the southern glacier is a lenticular boss of gneissoid granite or strongly gran.

itoid gneiss. Its ^{slopes are} surface is entirely
 covered with angular blocks, 6 to
 10 inches across and larger - ^{Saw one}
^{large crystal of quartzite} I was particularly interested in the
 astringsi developed ^{everywhere} (almost)
 over the surface of the glacier and on
 the ice cap. Those of the glacier were
 more varied in form and more charac-
 teristic perhaps than those of the ice cap,
 the snow left on the glacier being hard
 and more closely compressed than
 that of the cap - through greater force
 of the wind perhaps. The astringsi of
 the glacier were in two layers, at
 least, the lower pointing east and
 the upper southeast. Noted concave
 like little cirques, concave toward
 the wind and bounded by vertical walls
 one - two inches high. Much erosion
 of the packed snow by the sand-blast
 action of the driving hardened snow
 particles. In many places saw little
 cliffs 2-3 inches high, vertical to
 wind, with slopes at bottom like the
 talus ~~slopes~~ slopes of a rock cliff but
 with growth in opposite direction
 - that is, they were caused by snow
 particles driven against the
 vertical walls. Layering action
 of the wind on the snow evident

Some sastrugi had a shape like the head of a turtle, with overhanging front and break under which a moat had been cut by erosion - thus;
~~in profile~~



After leaving the ridge of the present beach we counted eight more and higher ^{up to 75 ft above tide}, but less well developed, essentially parallel beaches. The ridge seems to be due to the shoving action of the ice foot. The inner beaches had been cut off and ~~worn away~~ partly worn away toward the south by the scouring action of the summer streams coming from the glacier.

The front of the narrow bar south of the nunatak is much steeper than the northern part of this place.

Note on the freezing of the sea ice - Over and over again I observed that the surface water to a depth of two or three inches froze in plates or blades forming a velvety network of ice with water between the blades or plates. The light reflected from these gave a beautiful sheen to the surface. As we lay at anchor being frozen in, I noticed that the sea ice when two or three inches thick ~~and~~ was still mushy and flexible and not strong enough to walk or stand upon, very different from fresh water pond or lake ice after it was even six inches thick the upper surface was wet and unfrozen on account of the salt mixed with it. The surface became dry and frozen when the temperature of the air remained at ~~815~~ ^{about $15^{\circ} \pm 7$} ~~16~~ ^{or lower}. The freezing of the sea water forces much of the contained salts to the surface which accounts for this mushiness at temperatures much below the freezing point of ordinary sea water.

With Langquary -
Visit to glaciers
head May

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30 X - 2000 paces across bay
to head - Bar 700

+ 1000 paces to foot of glacier

+ 1100 " to ^{top} nose of nunatak
Bar 1100 ft

Highest point of nunatak 1275 ft
+ 600 paces from nose -

Highest part of ridge shows
much ledge in place spec.
Several loose blocks of quartz-
ite from elsewhere (NE?)
are on the ridge showing
former covering by the
glacier. Hornblende schistocratic on
Isaf dike direction

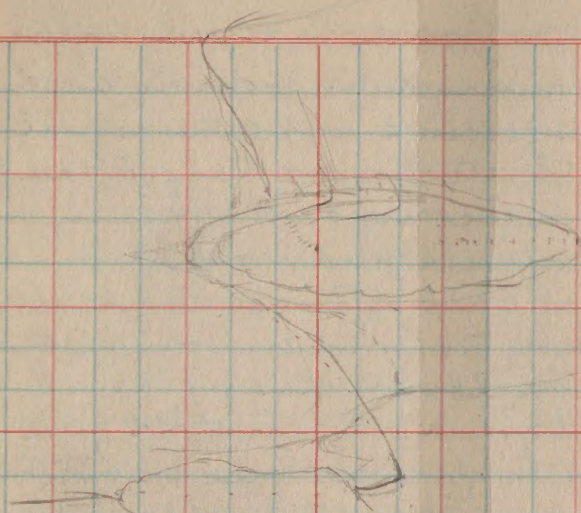
About N-S crosses middle
of ridge. Another was observed fur-
ther east in ridge. Both seem to have
suffered from stress with the gneiss
Almost the whole crest of the ridge
is formed of the jointed and frac-
tured ledge in place

Specimens 590-594 gneiss; 595-7 dike
Good orchards seen in snow

After coming down ~~to~~ the glacier we passed around the western end of the nunatak, visited the front of the southern arm of the glacier and then a ^{small} hanging - and - piedmont glacier near the latter and returned to ship.

Base of northern ~~area~~ and nunatak bar. ~~to~~ 775 ft. making nunatak 500 feet high above plain.

At western end of nunatak a long narrow snow drift descends to the plain from about $\frac{1}{4}$ way up the rock slope of the nunatak. This drift seems to have been formed principally by the snow driving down from the southern branch of the glacier under the southeast storms and then to have had its northern part deeply eroded by the hard snow driven against it by the northeast winds. The lower two thirds or three quarters of the drift is composed of ice or icy snow. This ice evidently has been formed by the snow drift melting and settling under the influence of the summer ~~sun~~ sun. Blocks of ice have fallen from the mass on the north side and are now surrounded by mounds in the snow of the plain.



~~What was this apt to be a hanging glacier~~

The southern branch of the Chert glacier is much steeper in front than ~~the~~ its northern branch. Its surface snow is hardened snow. The front decreases in height from the nunatak to the cliff, apparently on account of the scouring action of the northeast wind and the drifting of the snow against the nunatak. Furthermore it seems likely that the swirling of the N.E. wind over the nunatak and against the cliff is the cause of the steepness of the front, ~~and~~ and then back to N.W. due to foot of the little piedmont glacier

what was thought to be a hanging glacier coming down from the southern cliffs 200 yds \pm west of the south branch of the Cluett Glacier has a broad high foot projecting on the plain and is therefore a piedmont glacier. The east side of this foot has been eroded by the wind driven snow from the Cluett Glacier so as to show at its base a vertical cliff face 15-20 feet high. This face shows ^{in the ice} much sand, mingled with angular bits of rock, for six feet above the ground (the plain) on which it rests. Above the sandy ice the glacier shows many scattered angular ~~blocks~~ stones six to twelve inches and more across, projecting from the ice. The vertical face furthermore has been scooped out ~~in~~ shallow, wavy depressions which are polished and oily in appearance. Upper part of mass rounded & polished & grooved - Shows two well marked thin bands of sand above the lower big one

5.1 - Oct -

Front of hanging - piedmont glacier faced at 1150 feet width along plain 650 feet of eastern portion of which is ~~terminal~~ moraine or masked by the moraine -

glacier debouches 125 paces (311') out onto the plain as measured for me by Dr. Sangamon

Front of southern branch Cluett glacier about 1500 ft long by my pacing (Sank had 650 paces)

The glacier shows ~~solid~~ ice below thin snow & has ground moraine in it abundantly

Bar 600' Sea level 500'

✓ 43-1 - 8/1 sec - Ice blocks & mounds ^{at the north base of} in the snow and ice drift at the western end of the Nunatak in Cluett Glacier.

Note. 31 October - Captain Pickels locates the "Cluett" in lat. $76^{\circ}21' N.$ by observation.

← one mile →

four
qc.

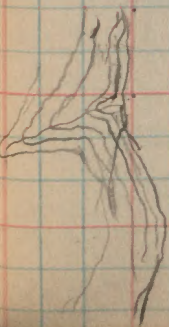
four
qc.

Cluett q.
Snowman

Cluett q.
(corner)

x "Cluett"

four
qc.



Nov 27 520 ~~8~~/10

✓ 11 Nov. 43-2 Ice foot + tide mark
on point $\frac{1}{2}$ mi from ship
(from T's back. 12:50 pm)

✓ 43-3. 16/12 View SE from grotto
 $1\frac{1}{2}$ mi from ship to show mts
south of bay. after sunset

Specimens 598, 599 and 600 are
from the ~~qu~~ strongly banded horn-
blendic (?) gneiss forming this grotto.
No. 600 shows sigmoid flexure of a
feldspathic lamella. Other parts
of the rock are as strongly feld-
spathic in composition as 598 &
599 are hornblendic. The gneiss
of this region evidently would repay
careful study.

2 Nov.

✓ 43. 4. 45/01. 12:20 p.m. Sunset betw.
Parker Snow Point & Conical Rock ²⁹

✓ 43-5. 11/10 seconds (after sunset - cloudy)
Point showing sigmoid flexures and
other in the gneiss. (Shutter failed to
work properly) n.g.

3 Nov. Bold bluff extending for a mile or more westward from Soapstone Valley - 900-1000 feet high by estimate of Ekblaw and myself - Generally red gneiss with predominant hornblende bands near bottom. Great trap dike ca 200 ft wide descends diagonally across face from valley to point and then rises again more abruptly from sea level, forming a broad ∇ which lies upon its side. Many tent shaped grottoes at sea level and above. A line of them 50-75 feet above the sea seems to indicate the locus of a former sea level (corresponding in height to the raised beaches at the head of the bay). Higher ones are to be seen ~~along~~ especially along a steeply inclined ($70^\circ \pm$) fault zone.

Approaching the second point, two miles from the valley and four miles from the head of the bay, one sees particularly beautiful banding in the gneiss, while near the point sigmoid flexures are pronounced.

4 Nov. Out along southeast shore
of bay with Captain Comer in
a snow storm. Went up on and
examined as well as I could in
the dim light a mass of gneiss
associated with a ~~basic~~ basic
dike that projects into the bay, forms
a promontory 100 yards wide, 30 ft
high and 100 yards out in the water.
Flatish top. Saw no signs of any
encampments on top. Went also
to the drift glacier further west. This
mass is very local but ice is dense
and blue. Formed apparently by
a snow drift in a small gulch.
Old surfaces are marked by curved
lines of sand which were blown
upon them as mass was formed.

8 Nov. 11 a.m. - clear - no sun.

Ex 15, ✓ 11 + 12. 4/25 Men hauling kamatik
load of ice from berg to ship for water supply.

7500

83

Nov. 9a-13° (min) 2 p 10

8 Nov. Cloudless, brilliant day. Went with Sarsquay toward glaciers. We separated on the plain at the head of the bay, he going to the Cluett glacier, while I went up the ridge between the Cluett and Corner glaciers and finally to the top of the mountain separating them. Ridge is covered with, or consists of, large and small angular fragments and bits down to gravel size of gneissoid rock with here and there an erratic of quartzite (?) on the surface. The disposition of material is hummocky and morainal in character. Apparently these two glaciers have receded from a more advanced position. In contrast with the Cluett glacier, which is snow covered with here and there a patch of ice, the Corner glacier presents a surface of glare ice robin's egg blue in color and its front is steep, rounding (convex) and precipitous. Front section shows flexure of ice layers beautifully marked by ground moraine material. Lateral moraines come around on north and south sides to form, when deposited, terminal moraines nearly as high as the front of the glacier.

12 Nov. Friday. Clear day overhead.

Lowlying fog bank came in from sea and enveloped ship for an hour or so after noon but did not reach more than half way up the cliffs. Calm practically all day. Light wind on glaciers for a short time. Went with Ekblaw up northern arm of Cluett glacier nearly to upper nose of Nunatak then turned Northeastward and went on up to lateral moraine extending along northern side of glacier for a mile and a half or two miles. Turns at its western end ~~seems~~ to form short terminal moraine which is nearly buried in snow. Decided that the real glacier probably ends near line drawn from western end of moraine southwestward to upper end of Nunatak (which is 400 ft above sea, see p 73) and that the ~~smooth~~ snow slope stretching from this line to the plain is the surface of an enormous drift. The moraine consists of angular fragments of gneiss. Descended the snow drift banked up on the north side of the moraine into the valley separating moraine continues in detached ridges well up eastward to the ice cap.

it from the ridge rising between the Cluett and Corner glaciers. Crossed the hummocky lower middle portion of this, where Ekblaw agrees with me in thinking to show ice action. Then we went down into the valley separating this ridge from the southern lateral moraine of the Corner glacier and up onto that moraine. Saw nothing but gneiss. Followed the shallow depression between the upper part of the moraine and the ice down to the western end of the glacier. Ice shows beautiful overturned folds and thrust faults near its front, and therefore is to be considered an active glacier.

There I met Captain George Comer,
the ice pilot provided by the Museum
and accepted by the Grenfell Associ-
ation of America, owners of the vessel,
for the proposed voyage. He had
been in waiting for some days.

~~Not used~~ Parker Sued Bay 87
Greenland - 16 December 1915

President H. F. Osborn

American Mus. Nat. Hist., New York.

Dear Sir:

I beg to submit the following report of the voyage of the ~~Geo~~ auxiliary schooner "George B. Cluett" under charter to The American Museum of Natural History for the relief of the Crocker Land Expedition Party to bring back the members of the party and their collections and other property from Etah, North Greenland.

Acting under your instructions to take charge of this relief expedition, I left New York on 1 July and proceeded to Sydney, Nova Scotia, spending Tuesday, 6 July, with Admiral Peary at Eagle Island. He gave me several suggestions regarding plans. That evening I received word that the "Cluett" would not leave St. Anthony, N. F., until 10 July, but I wired her captain to hasten his departure and I went on to Sydney, where I arrived on the 8th. The "Cluett" did not leave St. Anthony until noon of the 10th, thus being delivered to us nine days later than was ~~specified~~ the date specified in her

charter party. On account of delays due to adverse weather, according to Captain Pickels's statement to me, she did not reach Sydney until noon of the 16th. Some repairs were then made on windlass and engine, our cargo was taken on board, a new crew was shipped and the vessel left Sydney for Etah at 6 p.m., 19 July, under engine power. Soon after 8 p.m. the engine refused to work, but the wind was fair and good and we proceeded without anxiety on my part. The engine was coaxed to run several hours during the night of 20-21 July, but on the 22^d it was reported to be entirely out of commission with a crack in the hub of the flywheel.

We reached Battle Harbor at 6 p.m., 25 July, just six days from Sydney instead of the three or three and one-half that the journey would have taken with the calm weather that we had, if the engine had been in good order when we started from Sydney and if the engineer had been competent. I understand now that it can be proved that the engine was ~~out of~~ radically out of order before the vessel reached St. Anthony. If this be true, the

owners violated the charter party in advance of the beginning of the voyage. Other violations will be mentioned later. Crude repairs to the flywheel were made by Captain Pickels and the engineer at the blacksmith shop at Battle Harbor, and we sailed for Greenland at 4 p.m., 26 July.

We averaged a fair run under sail as far as Godhavn, Disko Island, where we came to anchor at 1:30 am. 5 August, in a flat calm, having used the engine for several hours on gasoline to cross Disko Sound. It will not run on kerosene and but a small supply of gasoline was procured at Sydney. Then ensued four days of flat calm, two of which we spent in Godhavn Harbor. Had the engine been in good order ~~we~~ we should have left there on the day of our arrival and proceeded under power up the coast. As it was, delayed by calm weather and light winds and having only one good breeze, we did not reach Upernivik till 7 p.m., 10 August. We stopped there for news of the Crocker Land party and information about the

ice in Melville Bay. We could not go ashore that evening on account of the wind, but the next day was calm, we got our information early in the morning and ^{we} should have gotten away before noon had the engine been ~~usable~~ ^{properly} usable.

We left Upernivik under power at 6:10 a. m., 12 August, but changed to sails a half hour later, or as soon as we were clear of the islands. That afternoon we sighted the great ice pack. We skirted along it north northeastward for four days till we were off Devil's Thumb, which is considered the southern limit of Melville Bay.

At about 6 a. m. the following day, 17 August, the vessel was moved to a fan of ice in the pack and we began our drift across the Bay. Eighteen days later (4 September) we passed Cape York, the northern limit of Melville Bay, about 150 miles from Devil's Thumb. It then took us seven days to advance to ~~Cape~~ about 30 miles to Conical Rock.

The following morning, 12 September, we rounded Cape Atkol to go into North Star Bay, and ~~two days later the "Cluett" came to anchor~~

but the wind died out and we were 91
held in the strait between the Cape
and Wostenholme Island.

~~Off Unalakleet at the head of the bay -~~
~~40 miles from Cape York~~

As may be seen by Captain Comer's
report as ice-pilot, the original
of which will be handed to you
when I reach New York, Captain
Pickels lacked competence and
energy in contending with ~~unusually~~ ^{the} severe ice-conditions in Mel-
ville Bay and between Cape York
and Conical Rock. Captain
Comer states that Captain Pickels
made no adequate preparation for
a voyage of the kind that was ~~was~~
reasonably to be expected in visiting
Etah; also that Captain Pickels showed
his lack of knowledge, skill and pro-
per energy in working the vessel
through the ice of Melville Bay
and off Cape York; furthermore
that Captain Pickels never called upon
him (Captain Comer), the recognized
ice pilot of great experience with
sailing vessels in Arctic ice, for
any advice or assistance when his
counsel would or might have been
of use, but on the contrary resented
and rejected all suggestions that Cap-
tain Comer ventured to make.
This lack of proper tools and the failure
to utilize the ice pilot seem to con-

stitute violations of the contract.

Off Cape Athol we met Peter Frenchen, Danish manager at Umanak of ~~Rasmussen's~~ Knud Rasmussen's Committee with which the Museum has most cordial relations, in his kerosene power-boat the "Ingerlis", towing Rasmussen's chartered schooner the "Cap York" out of North Star Bay to start on her way southward. Mr. Frenchen offered to take me on to Etah to get those of the Crocker Land party who were to return and bring back a supply of gasoline ~~for~~ for the "George B. Cluett", her supply of that material having been entirely inadequate to begin with and being now almost exhausted. I accepted his offer, put the Crocker Land mail and a few other things on board the "Ingerlis" and we started northward at 3:30 p.m. in calm weather.

The "George B. Cluett" was to follow us, if the wind should be favorable in seasons, but four days of calm weather and light winds supervened and all that she could do was to work her way to the head of North Star Bay, where she anchored off Umanak on 14 September, and she

was not able to proceed farther north.

On our way to Etah, Mr. Frenchen and I stopped at the Kiatak on the south-eastern side of Northumberland ^{Island} to leave a victrola which Admiral Peary asked me to deliver to Ootah one of his North Polar companions. The stop should not have delayed us more than an hour, since the place was directly on our route, but proper care of our boat was not taken and we were left on the rocks by the receding tide, ~~and~~ ^{we} ~~delayed~~ lost another seven hours before we could get off and go on with our journey. The 13th, however, was a calm, beautiful day like the 12th and we made good progress until about 8 p.m., when our engine broke down, five or six hours run from our destination. Mr. Frenchen and his two Eskimo assistants then towed the heavy launch by means of the dingy, rowing five hours or more to reach a safe anchorage in Sornaaq Bay. During the night, a northeasterly gale descended upon us and raged for 24 hours, keeping us at anchor most of the time and preventing our rounding Cape Alexander till about 4:30 o'clock of the morning of the 15th. We dropped anchor

off the Expedition headquarters at Etah at 6:45 o'clock the same morning.

I found Messrs. Ekblaw, Tanquary, Green and Allen at the house. Messrs. Mac Millan and Small were at Nerke, forty miles south of Etah, hunting walrus for dog food. Dr. Hunt had left 24 hours before my arrival for a two or three week absence hunting caribou in the country east of Etah. All hope of the arrival of a ship this year had been given up two or three weeks before my arrival, and preparations were being made by the party for a third winter in the Arctic. A messenger was despatched immediately for Dr. Hunt, in the hope that he might be overtaken at his first camp, but the mission ^{to our great regret} was unsuccessful. The Expedition headquarters is a commodious house and there was a reasonable supply of provisions on hand to enable the men to remain over with conservative use of the food, in connection with the fresh meat which had been and could be secured by hunting. There was plenty of fuel and oil for all purposes.

for an attempt at Melville Bay, ~~and~~
~~that one should be made in spite~~
~~of the light wind and our broken engine.~~
The efforts that were made were not made
at the right times or pushed as they should
have been, and other opportunities
were allowed to slip by unimproved.

One of the worst features of the
whole enterprise and the one that
now seems most liable to lead to
serious consequences is the shortage
of food supplies on board the "Cluett".
When Captain Pickels was questioned
in New York, Boston and North
Sydney regarding supplies he said
that he had plenty on board for
a two year voyage. Having heard
of this statement, I did not inquire
into the matter particularly, sup-
posing everything to be all right.

Lyman Abbott: "Reminiscences", The Outlook, 23 June, 1915, pp. 463, 464.
(Conclusion of article.)

I have faith in my fellow-men. I believe in their honesty of purpose and their competency of judgment. I have seen them take up great questions of National policy, one after another, and decide them aright, sometimes overriding their leaders in so doing. They have endured four years of terrible self-sacrifice in order to preserve the Nation intact and set it free from bondage; they have given away millions of acres of their lands to foreign immigrants who promised to dwell upon and cultivate them, recognizing the truth that the wealth of a nation consists not in its soil but in its people; they have denied themselves the right to purchase their goods in the cheapest market that they might make America an industrially independent Nation; they have voted to pay the Nation's debts in gold when, without breaking the letter of their bond, they could have saved millions of dollars by paying them in silver; they have taxed themselves year after year for an expensive system of public education, because they recognize the value to the Nation of brain power in its humblest and lowliest citizens; they have voted to carry on a war for the succor of a feeble neighbor, and have brushed aside impatiently the protests alike of materialists, who argued that it did not pay, and of timid idealists, who feared that it would convert the Republic into an empire; they have perceived the perils of the country in a growing plutocracy, and have entered on the task of bringing the aristocracy of wealth under the control of the democracy of industry. I have been personally, though not intimately, acquainted with eight Presidents—Grant, the soldier; Hayes, the peace-maker; Garfield, the orator; Cleveland, the administrator; McKinley, the cautious; Roosevelt, the courageous; Taft, the lawyer;

Wilson, the scholar. And I have known enough of other men in public life—Senators, Representatives, Governors, Mayors, and their subordinates—to know that while some politicians are unscrupulous self-seekers in America as in other countries, America has her share of public men as true, as pure, as self-denying, as are to be found anywhere in the world. My faith in my fellow-men has been strengthened by my lifelong study of our National life. The evils from which we have suffered have been caused, not by too great a trust, but by too great a distrust of the people; and I repeat again, as my well-considered conclusion from such life study, what I have often repeated in public speech: The remedy for the ills of democracy is more democracy.

Handwritten scribbles and wavy lines at the top of the page.

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